

REMARKS

Claims 1-34 are currently active.

Replacement figures are enclosed.

Claims 1, 20 and 21 have been amended. Antecedent support for the amendments to the claims is found in paragraph [0034] of the published application where a region of the surface is referenced, paragraph [0037] where a mosaic of square images is referenced, and paragraph [0059] where tiles is referenced. The invention can determine BRDF for multiple points of the image or region or tile simultaneously.

Claims 26-33 have been added. Antecedent support for Claims 26-33 is found in Claims 1, 2, 3, 7, 11 and 23.

The Examiner has rejected Claims 1 and 21 as being anticipated by Davis. In view of the amendments to these claims, applicant respectfully traverses this rejection.

Referring to Davis, there is disclosed a directional reflectometer for measuring optical bidirectional reflectance. Davis teaches a device 100 for measuring the hemispherical reflectance and forms a video image of the angular distribution of the specularly and diffusely

reflected radiation. The device uses the imaging properties of an ellipsoidal reflector 10. Light emerging from one focus 12 of the ellipse is specularly reflected and converges toward the second focus 14, but is redirected by a secondary mirror 16. The major axis 18 passes through the foci 12 and 14, and is tilted relative to the sample surface to facilitate the collection of grazing rays. See column 4, lines 57-67.

Davis teaches the elimination scheme utilizes the properties of the ellipsoid. An infrared source 20 is collimated to form a beam which is directed into a mirror 22 located at the upper focus 14. The beam passes through a hole in the secondary mirror 16 and strikes the ellipsoidal reflector 10 which relays the beam to the lower focus 12 on the sample. With a gimbel mirror 22 which pivots on the upper focus 14 and an appropriate slot in the secondary mere, the angle of incidence can be very from normal to near grazing. A second slot or hole is needed to allow fixed illumination when the devices turn 180° for measuring non-isotropic surfaces. See column 5, lines 14-28.

From the above description, and specifically with reference to figure 3, it is clear the Davis teaches that only the bidirectional reflectance of a single location is identified at a time, and not "the bidirectional reflectance distribution function of a plurality of locations of the subject simultaneously", as found in the claimed invention of applicant. Accordingly, Claims 1-25 are patentable over Davis. Accordingly, Claims 1, 20 and 21 are not anticipated by Davis.

The Examiner has rejected Claims 2, 7, 8, 20 and 22-25 as being unpatentable over Davis in view of Bahatt. Applicant respectfully traverses this rejection.

Referring to Bahatt, there is disclosed an optical resonance analysis system. The Examiner cites Bahatt simply because it teaches an array of LEDs for scanning purposes. See page 4 of the office action. It has nothing at all to do with, nor does it teach or suggest using light from each LED for taking a sub-measurement of the bidirectional reflectance distribution function. Applicant has amended the independent claims to remove the limitation of a structured light source. Separately, applicant has added the limitation of one or more values of the bidirectional reflectance distribution function from a plurality of locations of the subject simultaneously. Bahatt fails to teach or suggest anything at all that has to do with this limitation, let alone for taking any type of a plurality of measurements from many locations simultaneously. Instead, Bahatt teaches that scanning the illumination angle may be done with a variety of devices and techniques. Angle scanning may also be accomplished by mechanically moving a single source element to different locations that result in the source impinging on the sensor at different angles. An LED array can be constructed with multiple tilted rows of LEDs or straight rows and a tilted array, such that each LED is a unique height above or below the optical axis, and with the center LED exactly on this axis. See column 12, lines 21-28 of Bahatt. It is respectfully submitted that in light of the amendments to the claims, Bahatt has nothing at all to do with applicant's claimed invention, and certainly does not add anything at all to the teachings of Davis to arrive at applicant's claimed invention, as

amended. Accordingly, the applied art of record is not teach or suggest Claims 2, 7, 8, 20 and 22-25.

In view of the foregoing amendments and remarks, it is respectfully requested that the outstanding rejections and objections to this application be reconsidered and withdrawn, and Claims 1-34, now in this application be allowed.

Respectfully submitted,

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